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SIX BASIC PLAN CONCEPTS USED FOR CALIFORNIA SCHOOL HOUSING. A SEQUENTIAL DEVELOPMENT FROM 1900 TO TODAY.

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A floor plan accompanies each of six chronologically arranged schemes for housing educational programs. Scheme A represents the in-line corridor plan whose main characteristics are--(1) double loaded corridors with fixed bearing walls, (2) single window walls providing minimal light and ventilation, and (3) small classrooms with fixed desks and limited equipment. The finger plan of scheme B provides bi-lateral daylighting and cross-ventilation through use of exterior sheltered walkways instead of corridors. Scheme C, the economically based back-to-back plan, is characterized by--(1) open peripheral corridors, (2) single window walls, and (3) the potential for flebility. Scheme D modifies the back-to-back plan by introducing folding partitions between classrooms, improved mechanical systems, and shared team teaching preparation space. The cluster plan of scheme E groups 4 to 6 classrooms about a central activity area. It is characterized by flexibility and dependency on artificial light and ventilation. Scheme F represents the modular space shell which provides for new information media in a flexible, mechanically integrated environmental shell. (MH)

# SIX BASIC PLAN CONCEPTS USED FOR CALIFORNIA SCHOOL HOUSING

A sequential development
from 1900 to today

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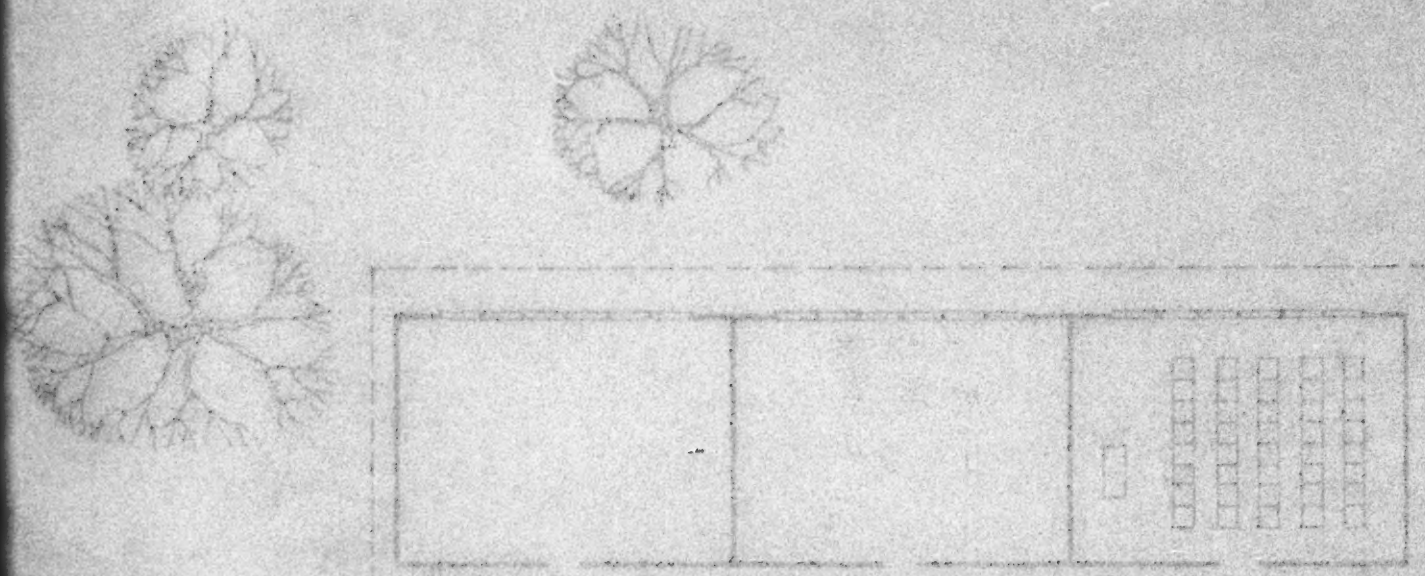
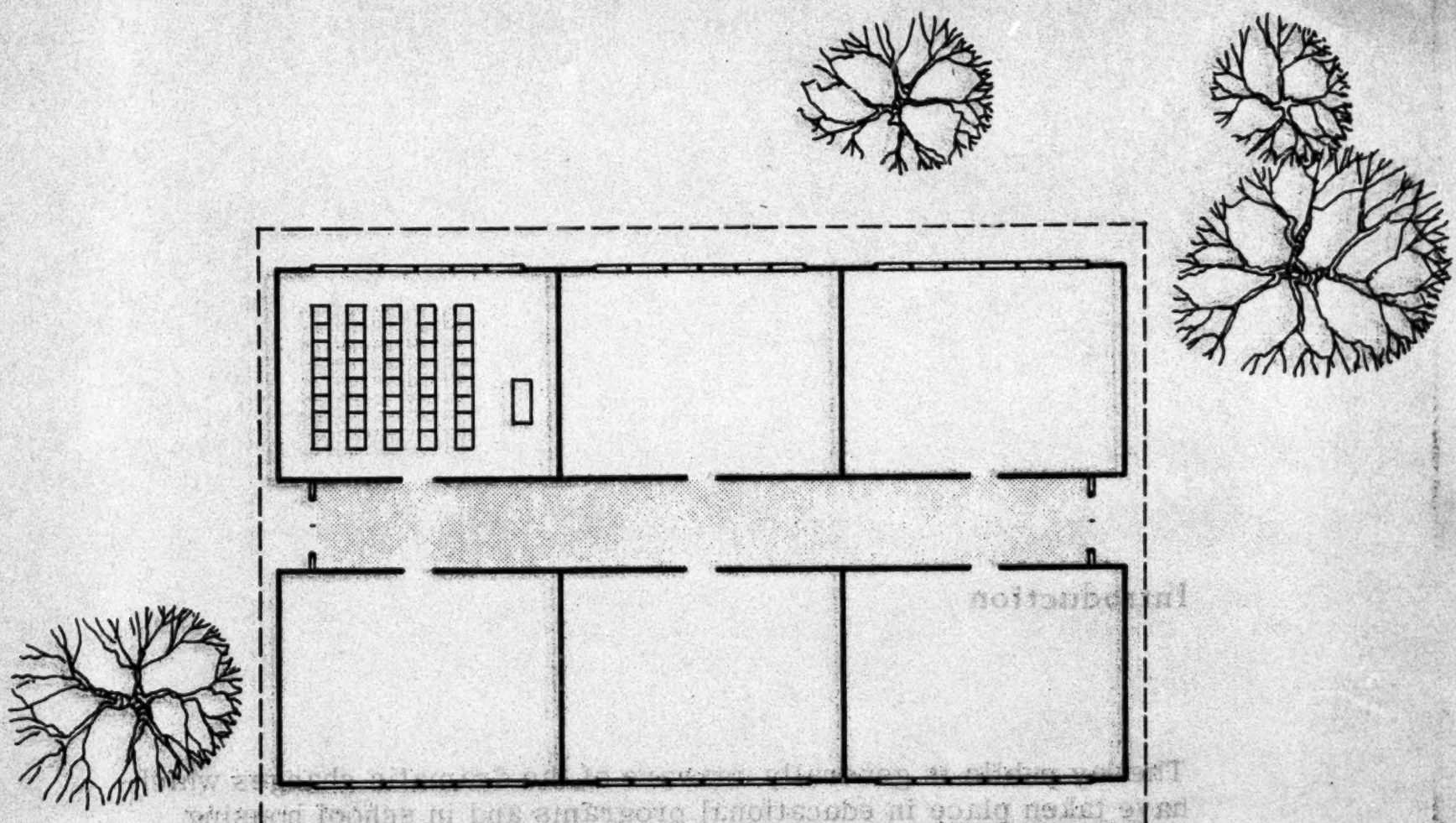


## Introduction

The lay public is generally unaware of the dramatic changes which have taken place in educational programs and in school housing. The facilities to accommodate education have undergone a very great technological change.

Each of the following diagrams illustrates a plan concept for housing approximately 180 to 200 students in a school of typical design for its time period. Scheme A shows a plan for an educational philosophy which held that all students have similar abilities and learn the same way. Therefore, a fixed class size in a fixed space was appropriate, and the teaching process was almost mechanical. Scheme F recognizes that each student is an individual and that the learning process demands varied and flexible techniques. Yet, even today we are only on the threshold of understanding what a learning environment should be if we are to take advantage of the new patterns of organization for instruction which will include recently developed electronic devices for transferring knowledge to the student.



1900 - 1930

# SCHEME A

## IN-LINE CORRIDOR PLAN

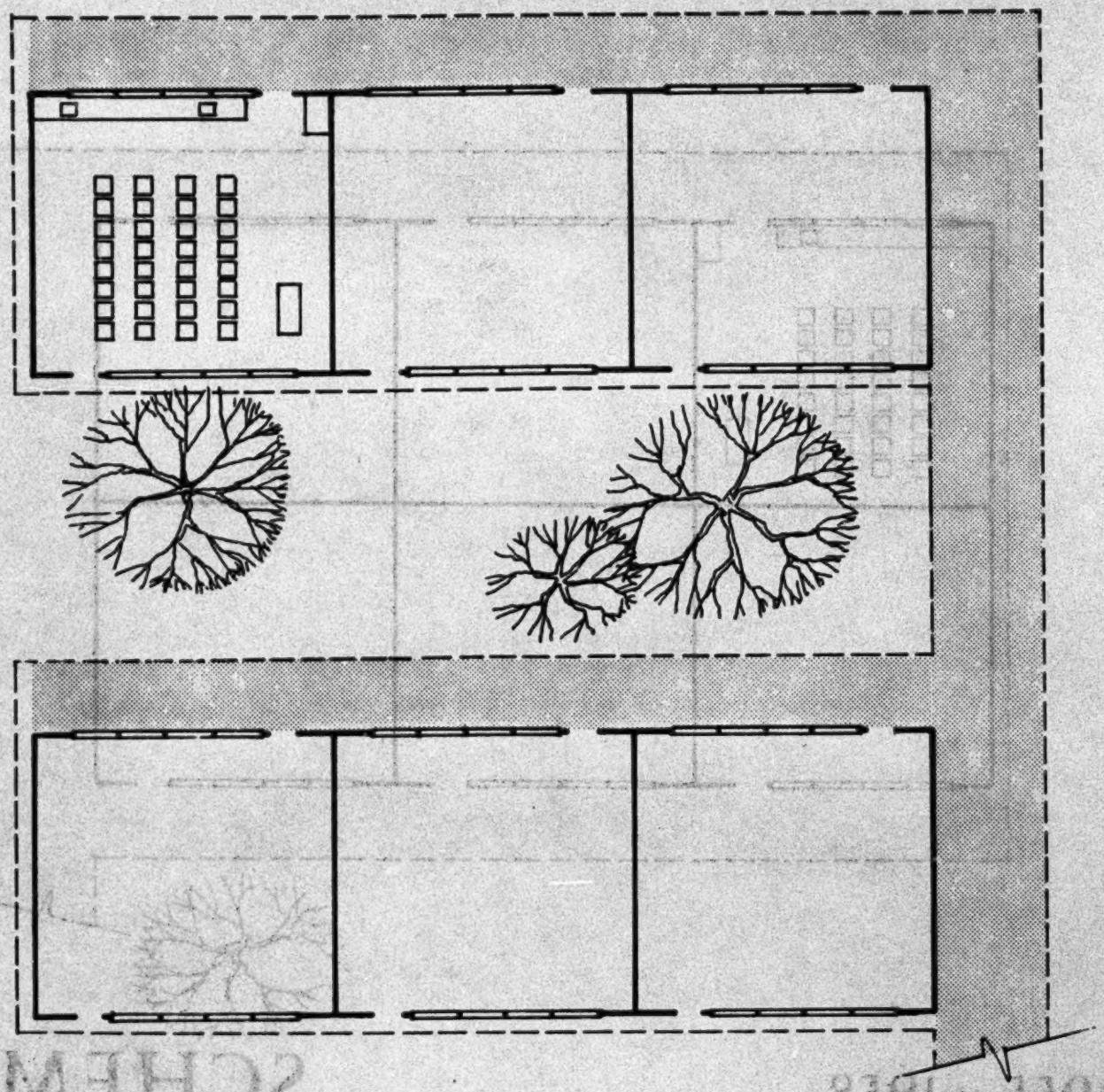
Many variations of this plan were built including some schools with 2 or 3 stories. All of these schools had the following characteristics in common:

1. Circulation was internal and by inside corridors. It was usually necessary to heat and light these corridors, in addition to the classrooms.

2. All interior walls were structural bearing walls, fixed in place. There was almost no potential for major alteration of these buildings.

3. Classrooms depended largely upon windows for light and ventilation. There was usually only one window wall and, therefore, light distribution was uneven and air distribution was poor.

4. Classrooms were small with desks fixed to the floor. The limited space and equipment restricted teaching to the disciplines of a formalized program.



1930 - 1960

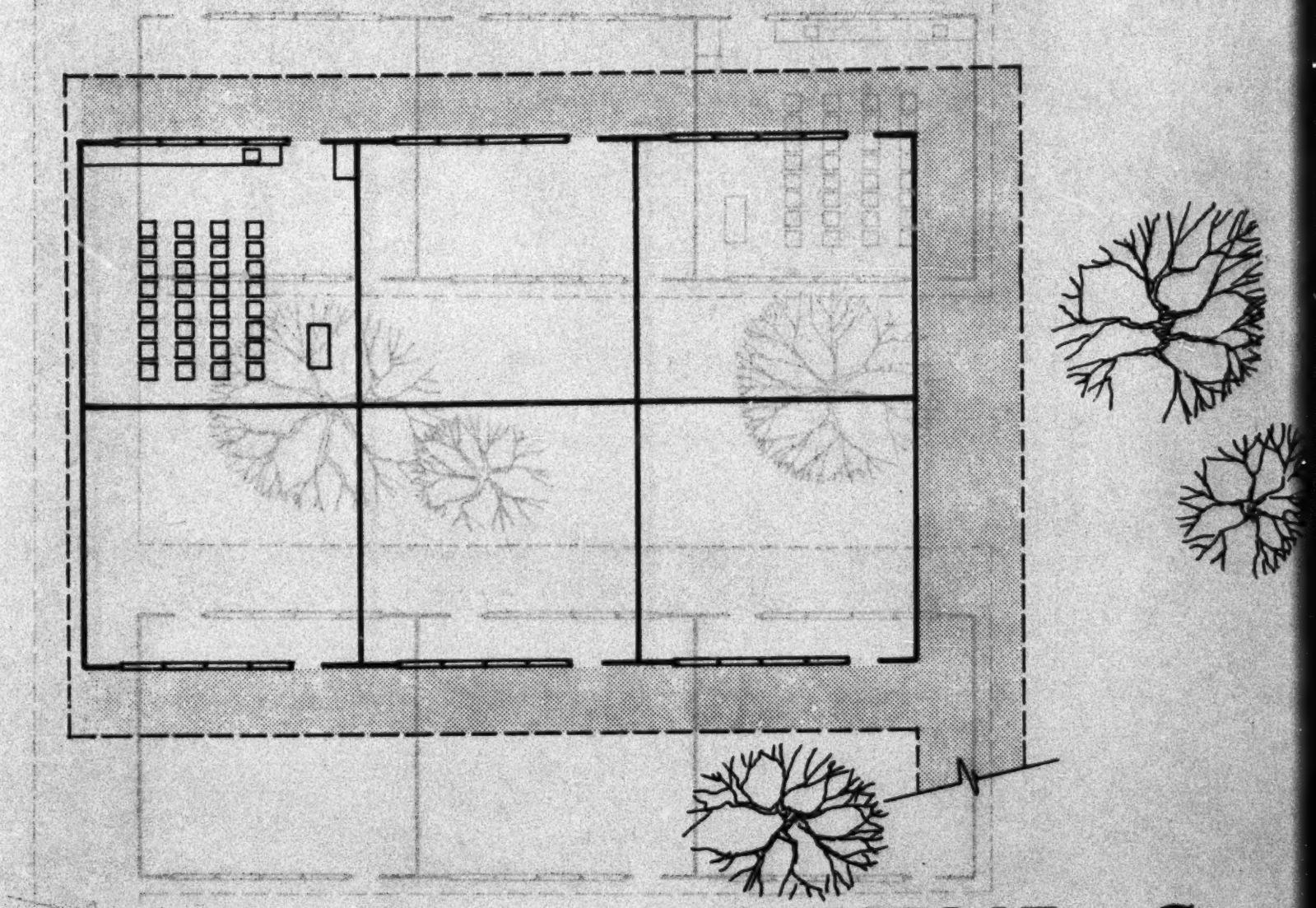
# SCHEME B

## FINGER PLAN

This 'finger-plan' concept was the most popular school building type ever constructed in California. Today a majority of our children obtain their education in this type of school. Architectural research during a 30 year period was focused on ways to obtain greater comfort by the use of natural air distribution and balanced daylighting. The result was a type of school which had the following features:

1. Circulation in outside sheltered walkways called 'open-corridors'. These open-corridors usually connected blocks of classrooms or 'fingers'.

2. Buildings only one classroom deep. This was an essential feature because it permitted the rooms to have windows on opposite walls. Designs were developed which gave excellent bi-lateral daylighting and cross-ventilation of air. Artificial lighting and mechanical ventilation systems were still in a primitive stage of development.



1955 - 1958

# SCHEME C

## BACK-TO-BACK PLAN

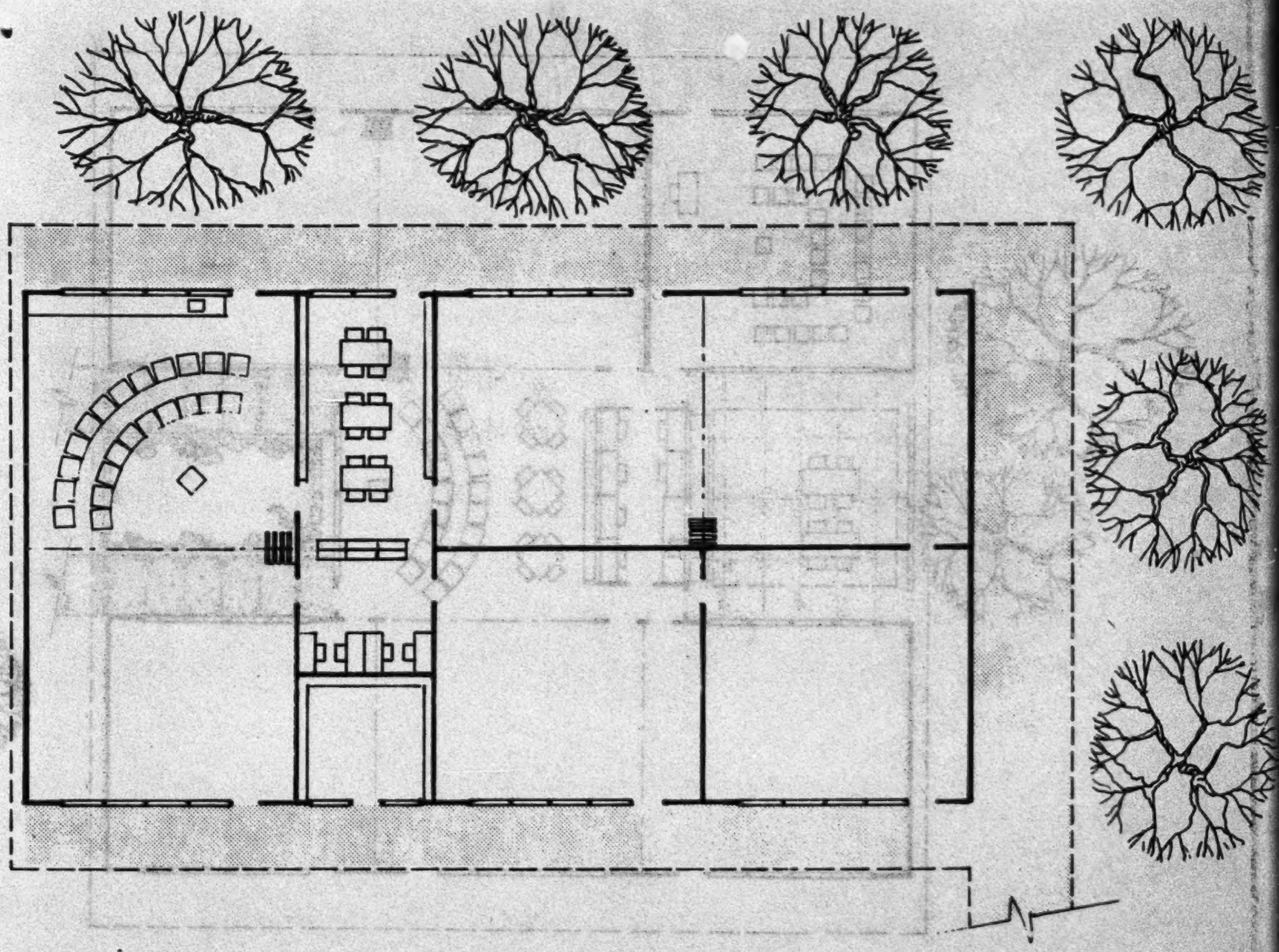
The 'back-to-back' school enjoyed a brief popularity in California. It was a concept developed by architects to achieve construction economies -- one wall was eliminated and the Master Plan became more compact. These schools had:

1. Open - corridors created by extending the roof overhangs.

2. One window wall per classroom. This negated all of the progress in comfort design which was achieved with the 'finger-plan' school. Bi-lateral lighting and cross-ventilation was no longer feasible. Attempts were made to handle air distribution by mechanical means, but most of these units were poorly ventilated.

3. Walls were generally fixed in place, therefore, flexibility was limited.

4. The building shell, with a 60 foot width rather than a 30 foot width, had the potential of creating spaces for the team teaching programs being considered by many districts.

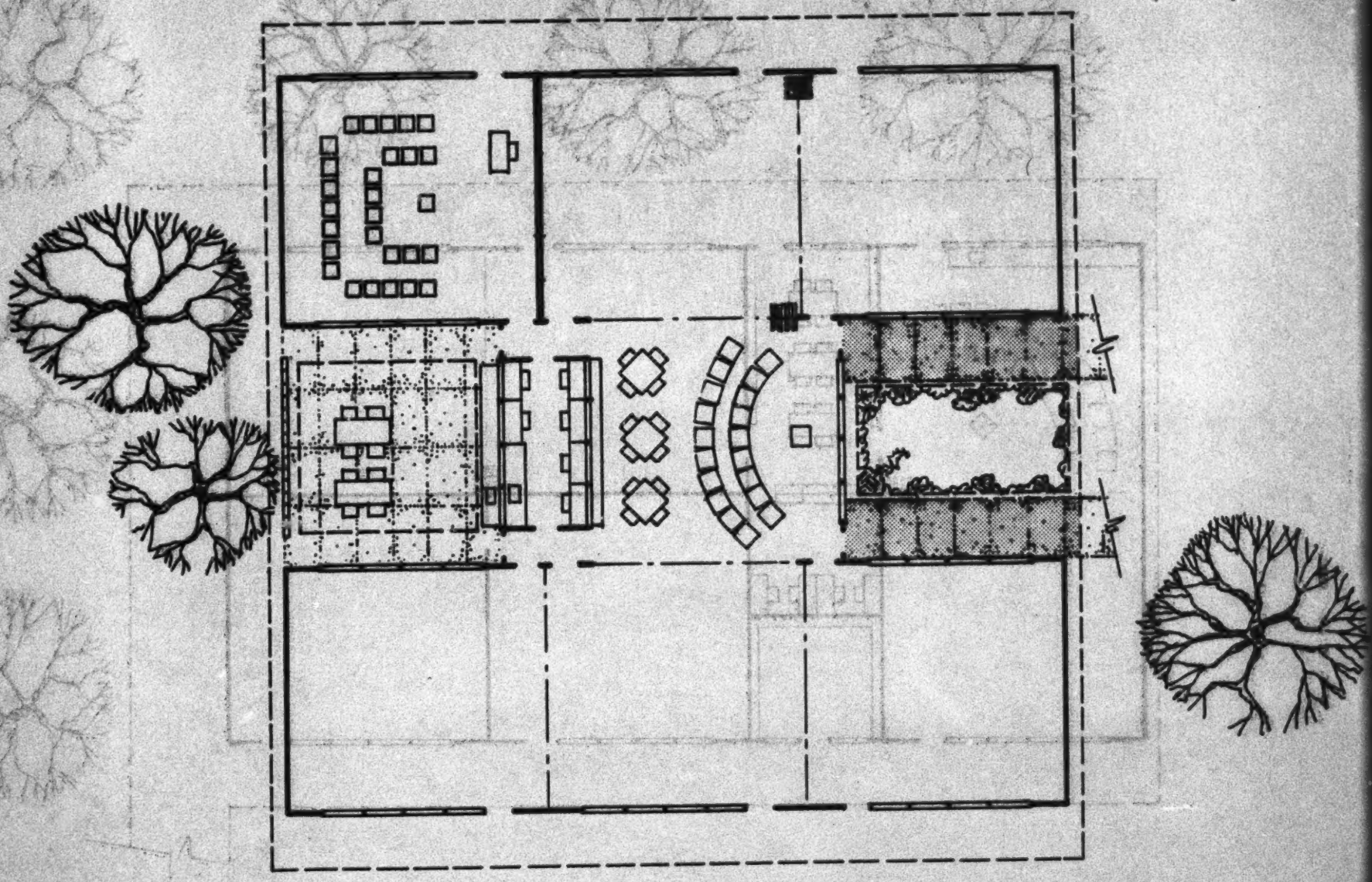


1958 - 1961

# SCHEME D

## BACK-TO-BACK MODIFIED

The back-to-back concept had introduced the long-span shell and eventually this school was modified to take advantage of this greater space potential. A few years of development produced schools which became more flexible. At first educators were delighted with the convenience achieved by introducing doors between classrooms. Later they demanded folding partitions between classrooms. Rooms were still standardized to accommodate 30 to 35 pupils. Educators assumed that by combining two such classrooms, the space could be used for large group instructional techniques. Occasionally additional space was included for teachers' preparation, for storage, and for instruction with small groups. This space was most convenient when placed between four classrooms. These schools overcame some of the ventilation problems of their predecessors by improved mechanical systems.



1960 - 1966

# SCHEME E

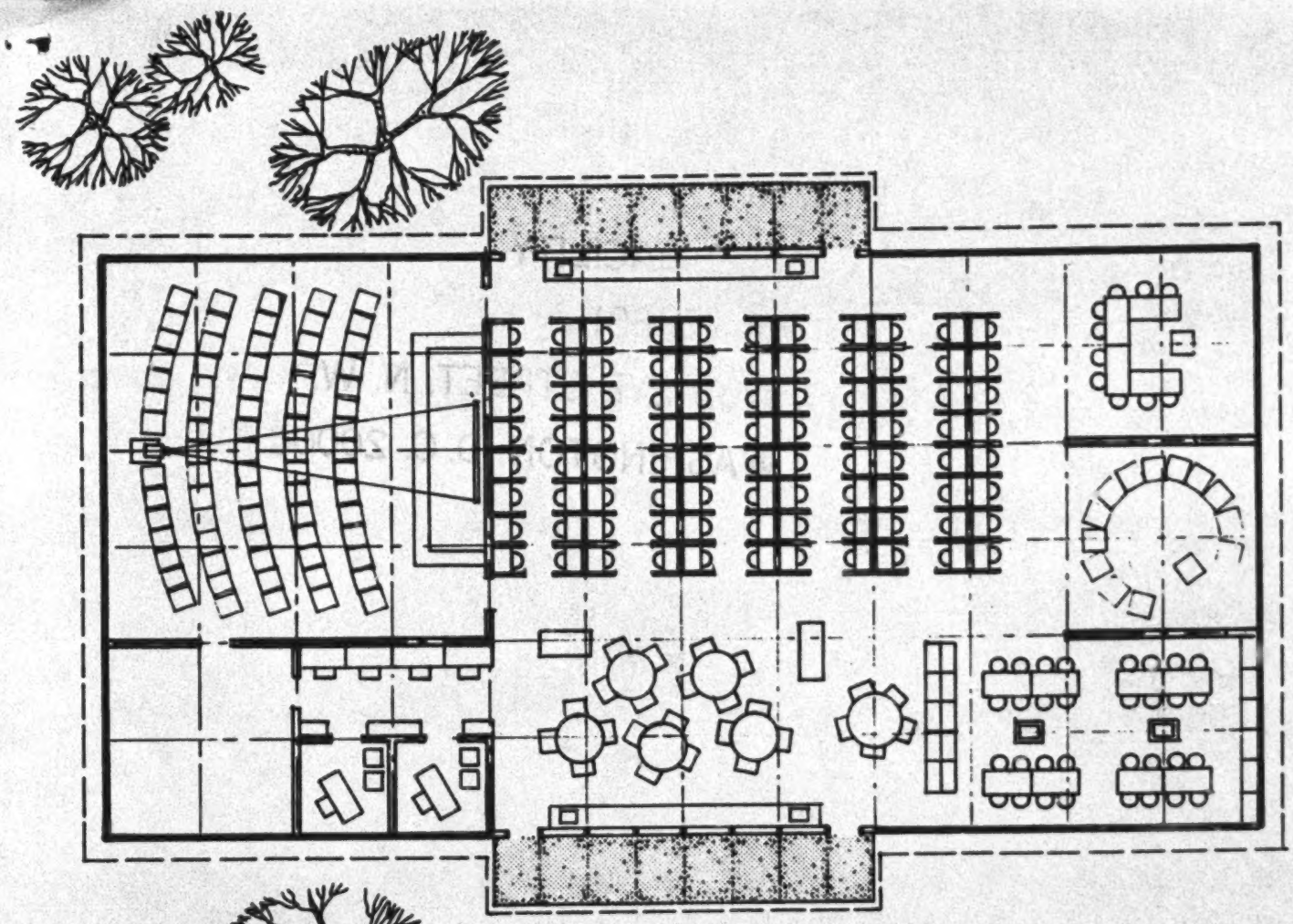
## CLUSTER PLAN

**The 'cluster-plan' school developed almost over night from the demands of educators for schools that would permit co-operative teaching programs and various sizes of learning groups. The cluster-plan school has been so widely accepted throughout California Schools that today most new school construction is of this type. The typical cluster-plan school has the following features:**

1. **Generally 4 to 6 classrooms are grouped about a central activity area. This core area is used for a variety of functions such as, audio-visual instruction, lecture, feeding, games, and sometimes as sub-libraries.**

2. **Very great flexibility. Originally demountable or folding walls separated the classrooms, but in many of the more recent schools the interior walls are left out and space division is achieved by cabinetwork or movable space dividers.**

3. **Dependence on artificial lighting systems and mechanical ventilation. Most of these schools are air-conditioned.**



1965 -

# SCHEME F

## MODULAR SPACE SHELL

Recent trends in school housing have produced schools with movable walls, air conditioning, carpeted floors, and a highly controlled mechanical environment. Technology has now achieved total integration between, structure, lighting systems, air distribution systems, and interior space dividers. These schools offer a degree of flexibility never before equaled. The whole interior can be quickly changed upon demand similar to that of a theater stage. Teaching in such space permits large and small group instruction, cooperative teaching, and individual learning experiences. Self instruction and the retrieval of information through electronic means are already gaining great significance. Our older schools are not adapted to these functions. The integrated flexible space shell represents the first answer yet found to the development of school housing that will not become quickly obsolete.

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